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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/617,521	07/11/2003	Bruno Ghyselen	4717-5500	3570

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EXAMINER	
DOTY, HEATHER ANNE	
ART UNIT	**PAPER NUMBER**
2813	

DATE MAILED: 05/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/617,521	GHYSELEN, BRUNO
	Examiner	Art Unit
	Heather A. Doty	2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 3-20* is/are pending in the application.

4a) Of the above claim(s) *2* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4 and 7-20* is/are rejected.

7)☒ Claim(s) *5 and 6* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/2/04 and 7/11/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of claims 1 and 3-20 in the reply filed on 1/10/05 is acknowledged. The traversal is on the ground(s) that the subject matter recited in claim 1 is generic, and thus that dependent claim 2 should not be subject to restriction, and that searching with regard to the method and structure for this feature would not result in an undue burden on the Examiner. This is not found persuasive because dependent claim 2 reads on a non-elected, patentably distinct species, which introduces undue burden of search. Furthermore, Applicant provides no evidence that the non-elected species is not an obvious variant of the elected species.

The requirement is still deemed proper and is therefore made FINAL.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless – (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 7-11, and 13-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishida et al. (U.S. 6,566,235).

Regarding claim 1, Nishida et al. teaches a method of providing a regular outline in a useful layer of material that is transferred from a source substrate onto a support substrate during the fabrication of a composite substrate for subsequent use in electronics, optics, or optoelectronics, which comprises providing a shoulder on a front

face of one of the source or support substrates about its periphery, wherein the shoulder defines an inner projecting zone that has a top face, a sidewall, and a regular outline (Fig. 1D); molecularly bonding the top face of the projecting zone to a receiving face of the other of the source or support substrates (Fig 1E; column 4, lines 48-53); and removing a portion of the source substrate to provide the useful layer having the regular outline on the support substrate (column 4, lines 54-67).

Regarding claim 3, Nishida et al. teaches the method of claim 1, wherein the shoulder is provided on the front face of the source substrate, the shoulder including the useful layer that is to be transferred, and the top face of the projecting zone is molecularly bonded to the receiving face of the support structure (Fig. 1).

Regarding claim 7, Nishida et al. teaches the method according to claim 1, wherein the sidewall of the projecting zone is substantially perpendicular to the top face (Fig. 1D).

Regarding claim 8, Nishida et al. teaches the method according to claim 1 which further comprises, prior to the bonding step, forming a zone of weakness within the source substrate (porous layer **103** in Fig. 1B; column 3, lines 39-54).

Regarding claim 9, Nishida et al. teaches the method according to claim 8, wherein the useful layer extends between the zone of weakness (**103** in Fig. 1) and the face of the source substrate (Fig 1), and after the bonding step, the method further comprises detaching the useful layer from the remainder of the source substrate along the zone of weakness (Fig. 1F; column 4, lines 54-67).

Regarding claims 10 and 11, Nishida et al. teaches the method according to claim 9, wherein the useful layer is detached by at least one of applying stresses of mechanical or electrical origin, supplying thermal energy, or chemical etching (column 4, lines 54-67), and wherein the zone of weakness is formed by a porous layer (**103** in Fig. 1).

Regarding claim 13, Nishida et al. teaches the method according to claim 12, wherein the height of the projecting zone of the source substrate is greater than or equal to the thickness of the useful layer (Fig. 1D shows projecting zone including the entire thickness of the useful layer **104** plus part of the thickness of the porous layer **103**).

Regarding claim 14, Nishida et al. teaches the method according to claim 1, wherein the height of the projecting zone is 10 nm to 200 nm or more (Fig 1; column 11, lines 1-3, useful layer **104** has a thickness of 500 nm).

Regarding claim 15, Nishida et al. teaches the method according to claim 1, which further comprises polishing an exposed face of useful layer after detachment from the source substrate (column 5, lines 1-12; chemical etch removes excess porous layer from useful silicon layer **104**, smoothing it).

Regarding claims 16-18, Nishida et al. teaches the method according to claim 1, wherein the support substrate is produced from silicon, and the source substrate is formed from a semiconductor material, wherein the semiconductor material of the source substrate is silicon (column 2, line 66 – column 3, line 10).

Regarding claims 19 and 20, Nishida et al. teaches the method according to claim 1, wherein at least one of the molecularly bonded faces includes a layer of an insulating material (oxide **106** in Figs. 1E-1G), and wherein the molecularly bonded face of the source substrate includes a layer of an insulating material (column 14, lines 51-53).

Claims 1, 4, 8, 9, and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Abe et al. (WO 01/73831, published 10/4/01, with U.S. 6,583,029 used as a translation).

Regarding claim 1, Abe et al. teaches a method of providing a regular outline in a useful layer of material that is transferred from a source substrate onto a support substrate during the fabrication of a composite substrate for subsequent use in electronics, optics, or optoelectronics, which comprises providing a shoulder on a front face of one of the source or support substrates about its periphery, wherein the shoulder defines an inner projecting zone that has a top face, a sidewall, and a regular outline (Fig. 1); molecularly bonding the top face of the projecting zone to a receiving face of the other of the source or support substrates (Fig. 2; column 6, lines 45-63); and removing a portion of the source substrate to provide the useful layer having the regular outline on the support substrate (Fig. 3; column 7, lines 52-61).

Regarding claim 4, Abe et al. teaches the method according to claim 1, wherein the shoulder is provided by machining or etching the periphery of the front face of the substrate (column 6, lines 22-31).

Regarding claims 8 and 9, Abe et al. teaches the method according to claim 1, which further comprises, prior to the bonding step, forming a zone of weakness within the source substrate (column 7, lines 22-61), wherein the useful layer extends between the zone of weakness and the face of the source substrate, and after the bonding step, the method further comprises detaching the useful layer from the remainder of the source substrate along the zone of weakness (Fig. 3; column 7, lines 22-61).

Regarding claim 12, Abe et al. teaches the method according to claim 9, wherein the shoulder is provided on the front face of the source substrate prior to forming the zone of weakness (column 7, lines 26-39).

Allowable Subject Matter

Claims 5 and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art does not teach or suggest, in combination with the other claimed limitations, a receiving face bordered by a primary chamfer zone and secondary chamfer zone. Ito et al. (U.S. 5,152,857) and Yen (U.S. 5,597,410) teach receiving faces bordered by primary chamfer zones, but no secondary chamfer zones.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heather A. Doty, whose telephone number is 571-272-8429. The examiner can normally be reached on M-F, 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl Whitehead, Jr., can be reached at 571-272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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ERIK KIELIN
PRIMARY EXAMINER